

CLAIMS

What is claimed is:

Sub A1

- 1 1. An auxiliary power system for operation in cooperation with a primary engine
2 having a battery, comprising
3 (A) a secondary engine, and
4 (B) control means which shuts down such primary engine and starts such
5 secondary engine following a predetermined time period of idling of such primary
6 engine.
- 1 2. The auxiliary power system of claim 1, in which
2 such control means starts such secondary engine in response to a predetermined
3 ambient temperature if such primary engine is not operating.
- 1 3. The auxiliary power system of Claim 1, further comprising
2 an electrical power producing means driven by such secondary engine.
- 1 4. The auxiliary power system of Claim 3, in which
2 such electrical power producing means comprises a 240vac, 60Hz, single-phase
3 electrical generator.
- 1 5. The auxiliary power system of Claim 4, in which
2 such electrical generator produces at least 17 kva of power.
- 1 6. The auxiliary power system of Claim 4, further comprising
2 battery charging means.

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- 1 7. The auxiliary power system of Claim 6, in which
2 such control means
3 (i) isolates the battery of the primary engine from all dc loads upon
4 operation of such secondary engine, and
5 (ii) continuously charges the battery during operation of such
6 secondary engine.

- 1 8. The auxiliary power system of Claim 1, further comprising
2 (A) primary engine coolant pumping means, and
3 (B) heat exchanging means.

- 1 9. The auxiliary power system of Claim 8, further comprising
2 engine coolant heating means.

- 1 10. The auxiliary power system of Claim 9 further including,
2 coolant temperature sensing means, and in which
3 such control means maintains primary engine coolant temperature within a
4 predetermined temperature range.

- 1 11. The auxiliary power system of Claim 9, in which
2 such engine coolant heating means comprises electric heaters.

- 1 12. The auxiliary power system of Claim 1, further comprising
2 primary engine lube-oil pumping means.

- 1 13. The auxiliary power system of Claim 12, further comprising,
2 lube-oil heating means.

1 14. The auxiliary power system of Claim 13, further including,
2 primary lube-oil temperature sensing means, and in which
3 such control means maintains primary engine lube-oil temperature within a
4 predetermined temperature range.


1 15. The auxiliary power system of Claim 13, in which
2 such lube-oil heating means comprises electric heaters.

1 16. The auxiliary power system of Claim 1, further comprising
2 a remotely operable primary engine coolant drain valve.

1 17. The auxiliary power system of Claim 16, in which
2 such control means causes such remotely operable drain valve to open and drain
3 the primary engine coolant after a predetermined period of time in response to a
4 predetermined ambient temperature if such primary engine is not operating and such
5 secondary engine fails to start.

1 18. A method of supplying auxiliary power to a primary engine comprising the steps
2 of

- 3 (A) providing a secondary engine coupled to an electrical generator
4 (B) monitoring the operating condition of such primary engine
5 (C) starting such secondary engine in response to a predetermined condition of
6 such primary engine.

- 1 19. Method of claim 18, in which
2 the predetermined condition of such primary engine is selected from the group
3 consisting of:
4 (i) idling of such primary engine for a predetermined period of time,
5 and
6 (ii)  non-operation of such primary engine combined with a
7 predetermined ambient temperature.
- 1 20. Method of claim 18, further comprising
2 providing heating means for such primary engine coolant, and
3 providing heating means for such primary engine lube-oil.

add B2